

## Unwanted sex due to intoxication among Australians aged 16–69 years

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## **Abstract**

Intoxication can be a factor in unwanted sex, but research on the extent of the issue in both women and men is limited. We assessed the prevalence, correlates, and 10-year time-trends of unwanted sex due to intoxication among a representative sample of 4,279 women and 3,875 men aged 16–69 years in Australia and considered how these vary by gender. In 2012–13, 16% of women and 10% of men reported ever having had a sexual experience when they “did not want to because they were too drunk or high at the time.” For both women and men, this was associated with younger age, bisexual activity, and reports of lifetime injection drug use, sexually transmitted infections, and forced sex. Among women only, it was associated with drinking above guideline levels and ever having terminated a pregnancy. Among men only, it was associated with current tobacco smoking, elevated psychosocial distress, and poor general health. Compared with 2001–02 data, fewer men reported unwanted intoxicated sex, while there were no changes for women as a whole. Interpreting these findings through an intersectional assemblage framework supports stronger understanding of the multiple factors influencing sexuality and substance use with implications for promoting equity, safety, and sexual health.

## **Introduction**

The use of alcohol and other drugs is common in many dating and sexual contexts. A recent survey of American adults reported that about one-third of sexually active individuals sometimes, mostly, or always drink alcohol before sex (Eaton et al., 2015). In the context of intoxication, research with university students has found that 13–15% of women and 16–18% of men report being intoxicated at their last consensual sexual experience (Connor et al., 2013; Herbenick et al., 2018). Similar rates of intoxicated sex are also seen in secondary students (Fisher, 2019), with sexual minority youth nearly twice as likely to report this experience

compared to their heterosexual peers (Herrick et al., 2011). While much research has examined alcohol and sexual health behavior (George, 2019), particularly the complexities of sexual consent among college students (Muehlenhard et al., 2016), far less research has examined these intersections with a large broadly representative national sample.

Studies have shown that people often view alcohol and other drugs as having a positive effect on sex, increasing sexual arousal and excitement while decreasing inhibition (Lindgren et al., 2009; Livingston et al., 2013; Palamar et al., 2018). Indeed, alcohol has been described as a “social lubricant” and as inducing “liquid courage” (Lindgren et al., 2009). When mixed with environments that are “affectively charged” (e.g. clubs, parties, dates) (Duff, 2008), alcohol and other drugs may amplify capacities to feel desire and are thus sometimes regarded as facilitators of sexual behavior (Lefkowitz et al., 2015; Lindgren et al., 2009). However, perceptions can be inaccurate, as previous research has linked intoxication with higher risk for both sexual assault and unwanted (albeit consensual) sexual experiences, in particular among women, with differences seen by age- and sexuality-based subgroups (Herbenick et al., 2018).

### **Wanting and Consent**

Recognizing the complexities of sex while intoxicated begins with understanding the concepts of wanting and consent (O'Sullivan & Allgeier, 1998). Consent is generally defined in Australian law as free and voluntary agreement, but people vary considerably in how they seek and interpret consent, both before and during sexual interactions (Beres, 2007; Beres, 2014; Friedman, 2008; Humphreys, 2004; Lafrance et al., 2012). Muehlenhard et al. (2016)'s review highlighted three common understandings of consent: for some, consent is imagined as an internal state of willingness; for others, consent may involve behaviors such as kissing or other physical gestures that someone uses to infer agreement; and in recent years, there has been a shift towards the promotion of affirmative consent, that is explicit, conscious, and on-going agreement to participate in sexual activities of any kind (Muehlenhard et al., 2016).

Wanting is a distinct concept that refers to a desire or wish to engage in sex; consent may or may not accompany it. In fact, numerous studies in women (Bay-Cheng & Eliseo-Arras, 2008; Houts, 2005; Impett & Peplau, 2002; Katz & Tirone, 2010; Muehlenhard & Peterson, 2005; Peterson & Muehlenhard, 2007), and less so men (Ford, 2018; Vannier & O'Sullivan, 2010), have found that individuals often say “yes” to sex they do not want for various gendered reasons

(e.g., to please a partner (Lindgren et al., 2009), to save face or satisfy peer norms (Ford, 2018)), including when under the influence of alcohol and other drugs (Blythe et al., 2006). Research has also shown that alcohol may be used as a tool to remove some of the stigma of “inappropriate gender displays” of sexual desire among gay, lesbian, and heterosexual youth (Peralta, 2008). This can cause problems in the context of intoxication where paradoxes exist between legal and real-world experiences with consent.

Although it is possible for unwanted sex due to intoxication to be consensual (Herbenick et al., 2018), and for intoxicated sex to be pleasurable (Pedersen et al., 2017), many jurisdictions including Australia define sex while “substantially intoxicated” by alcohol or any drug as sexual assault (New South Wales Crimes Act 1900 No 40, 2020), because this makes a person unable to freely and voluntarily agree to sex. Understanding and addressing the social and cultural forces that contribute to unwanted intoxicated sex at the intersection of identity is thus critical to prevent impacts that are potentially harmful to people’s health, wellbeing, and rights (Connor et al., 2015; Cooper, 2002; Mooney-Somers et al., 2009).

### **Sex, Drugs, and Assemblages**

Multiple theories and literatures have been used to understand the alcohol and drug contexts of sex. Psychological and epidemiological studies have tended to emphasize individual vulnerabilities to/from potentially risky sexual behavior (e.g., physiological and cognitive factors). For instance, both alcohol expectancy theory (Fromme et al., 1999) and alcohol myopia theory (Steele & Josephs, 1990) posit that acute alcohol intoxication may play a role in the sexual processes leading to assault (George, 2019; George & Stoner, 2000). The arguments are that individuals who expect more positive and arousing effects from alcohol consumption are more likely to drink, and that heavy drinking can lead to an inability to see distal sexual risks and exacerbate impulsive and aggressive sexual behaviors, particularly in men (Abbey et al., 2014), though alcohol use does not cause sexual assault nor unwanted sex. On the other hand, sociological research has worked towards a more contextual understanding of the social, cultural, relational, and even structural influences on sexual behavior in the context of heavy substance use (e.g., Jensen & Hunt, 2019; Pedersen et al., 2017).

A potentially useful conceptual tool for bridging this divide between individual and social interpretations of risk is that of assemblages. Moving away from discrete determinants,

assemblage theory emphasizes the entanglements between persons and bodies, as well as between physical, social, and emotional environments, which, together, mediate the health and behavior of individuals and groups (Delanda, 2016). As a construct, sexuality (Fox & Alldred, 2013) and drug assemblages (Pedersen et al., 2017) are made up of a constellation of factors that may give rise to unwanted intoxicated sex. These may include gender-specific expectations that shape sexual emotions and behaviors (Wiederman, 2005) and alcohol and hook-up cultures that normalize heavy drinking and casual sex (Farvid & Braun, 2016; Wentland & Reissing, 2014), the latter increasingly facilitated by dating apps (Race, 2015). Larger, structural factors may involve institutional influences (or lack thereof) on practices of affirmative consent (Bay-Cheng, 2017) and social spaces, like nightlife environments, that are constituted through cultural meanings and interactions (e.g., getting wasted and mingling with others) (Pedersen et al., 2017). Alcohol research has also implicated a role of intersecting stigmas that may result in new forms of relating and belonging in drug-related sexual contexts, particularly in queer communities (Peralta, 2008), notwithstanding the known risks.

These assemblages, in conjunction with the pharmacological effects of alcohol and drugs on cognitive and perceptual processes (George & Stoner, 2000), may influence the ways in which both wanted and consensual sex is negotiated. Although positive experiences of sex and drugs are the norm (Herbenick et al., 2018; Pedersen et al., 2017), intoxication can increase the likelihood of misperceptions of sexual intent (Farris et al., 2010; Farris et al., 2008; Lindgren et al., 2008), lack of communication between partners (Akre et al., 2013), and lowered abilities to negotiate consent (Jozkowski et al., 2014; Jozkowski & Wiersma, 2015; Muehlenhard et al., 2016; Palamar et al., 2018; Testa & Livingston, 2009). This is concerning from a human rights perspective (World Association for Sexual Health, 2014) and for health promotion, as evidence from multiple studies indicate a link between unwanted intoxicated sex and a variety of physical, mental, and sexual and reproductive health outcomes, including unintended pregnancy and sexually transmitted infections (STIs) (Connor et al., 2015; Cooper, 2002; Mooney-Somers et al., 2009).

### **Current Study**

In the current paper, we used data from the Australian Study of Health and Relationships (ASHR) to estimate the prevalence, correlates, and 10-year time-trends of unwanted sex due to alcohol or drug intoxication in the Australian general population (for short, ‘unwanted

intoxicated sex’). In line with sex- and gender-based analysis in sexual health research (Johnson et al., 2009) and intersectionality theory (Collins, 1998; Crenshaw, 1989; hooks, 1984), we focused on how patterns varied between women and men, as well as between subgroups of women and men based on social factors (e.g. age, sexual behaviour). The main hypothesis was that women would be more likely than men to report unwanted intoxicated sex, with elevated odds among young women and bisexually active women, as well as bisexually active men and those who report experiencing forced sex in their lifetime. We also hypothesized that it would be associated with both social-cultural factors (e.g., heavy drinking, online dating apps) and health factors (e.g., STIs, pregnancy termination). We did not expect changes in the frequency of unwanted intoxicated sex over time. While sex and intoxication is clearly worthy of research, empirical insights into their relationship is perhaps more likely to influence public debate now more than ever because of the increased attention to this topic inspired by the #MeToo movement (Hill, 2017; Khomami, 2017).

## **Method**

### **Study Design**

ASHR is a repeated cross-sectional survey conducted every decade with a random probability sample of more than 20,000 Australians in all States and Territories (Richters et al., 2014; Smith et al., 2003). The first two surveys, conducted in 2001–02 (ASHR1) and 2012–13 (ASHR2), collected important information regarding a range of experiences with sexual and reproductive health. A third survey is scheduled for 2021–22. The datasets include different individuals. For the current analysis, ASHR2 data were used to provide nationally representative prevalence estimates of unwanted intoxicated sex and its correlates (primary analysis), while ASHR1 data were used to explore 10-year time trends between 2001–02 and 2012–13 (secondary analysis). Persons eligible to take part in the study were aged 16–69 years in ASHR2 (and 16–59 years in ASHR1) and sufficiently proficient in English. Participants were selected using random-digit dialling (RDD) from both landline and cell phone frames in ASHR2 (and landline only in ASHR1). The participation rate among eligible people was 66.2%. Participants completed computer-assisted telephone interviews (CATI) that lasted approximately 20 minutes (range: 10 to 60 minutes). A detailed description of the design and methods of ASHR can be found in previous papers (Richters et al., 2014; Smith et al., 2003).

### **Study Population and Final Analytic Sample**

A total of 20,091 individuals participated in ASHR2. Of these people, 8,575 completed the full (long-form) questionnaire, which included a module on violence and coercion across the spectrum including unwanted sex due to intoxication. The remainder completed a short-form questionnaire that omitted this module. Long-form interviews were completed by all participants with no partners in the past year or two or more partners, all participants with any same-sex experience, and a 20% random sample of those with one partner and no same-sex experience. This procedure, used in the French sex surveys also (Bajos & Bozon, 2012), was adopted to minimize the time spent interviewing a large number of heterosexuals who have similar sexual behaviors and maximize the number of interviews with sexual minorities and those with multiple partners.

Of the 8,575 individuals who completed the full questionnaire, we excluded 290 participants who reported that they never had sex and 131 participants who stated “do not know” or “prefer not to answer” to the main measure of interest (unwanted intoxicated sex). This represented 0.15% of data for the variable. Thus, the final analytic sample for descriptive and bivariable analyses included 8,154 individuals (3,875 men and 4,279 women). Using weights provided by the Social Research Centre, we assigned each person a weight to represent their contribution to the total population (ranging from 0.15 to 28.4, with a mean of 2.34), accounting for the survey design and adjusting to match the age, sex, and location distribution of the population at the 2011 Census. With these survey weights applied, this sample represented 19,369 women and men in Australia aged 16–69 years.

To retain the sample size for multivariable models, we imputed the mean value for missing observations for continuous variables, and, for categorical variables that had 15 or more missing observations, we created a separate response level labelled, “Do not know/prefer not to answer.” This yielded a sample size of 3,858 for men and 4,221 for women in the full multivariable models, or 99.5% and 98.6% of the sample, respectively.

### **Study Variables**

*Main measure.* The main measure was unwanted sex due to alcohol or drug intoxication. Participants were asked, “Have you ever had a sexual experience with a male or a female when you didn’t want to because you were too drunk or high at the time?”

*Stratification variable.* As we hypothesized that gender would predict different patterns of, and factors associated with, unwanted sex due to intoxication, all analyses were stratified by this variable. Participants were divided into two groups at enrolment based on their response to the question, “Are you a woman or a man aged between 16 and 69?” (as per guides for developing telephone surveys at the time, e.g., Bradburn et al., 2004). If there was more than one eligible resident at a household, the CATI program randomly selected the interviewee using an age-order protocol to prevent respondents self-selecting. A men’s or women’s questionnaire was then selected.

*Correlates.* Potential correlates were selected following *a priori* literature review and classified into four categories for clarity (see Tables for levels of measurement). These included: (1) socio-demographics, i.e., age, marital status, religiosity, education, annual household income, country of birth, Aboriginal or Torres Strait Islander identification, and region of residence; (2) sex-related items, i.e., sexual behavior (heterosexual behavior, same-sex behaviour, bisexual behaviour), receipt of sex education at school (defined as those who said “yes” to two questions: “Did you receive any sex education at school?” and “Did it include contraception and condom use?”), feelings about the importance of sex (trichotomized based on agreement to the statement, “an active sex life is important to my sense of wellbeing”), and use of the internet or an app to look for partners; (3) drug-related behaviours, i.e. lifetime injection drug use, current tobacco smoking, and drinking alcohol above National Health and Medical Research Council (NHMRC) (2009) guideline levels (i.e., >14 standard drinks a week for women and >28 for men); and (4) health indicators, i.e., self-rated general health, current psychosocial distress (measured in the past four weeks via the Kessler-10 psychosocial distress scale (Cronbach’s alpha = 0.83), with a score of one standard deviation above the mean chosen as a marker of distress (Clinical Research Unit for Anxiety and Depression, 2009)), forced sex (measured via the question, “Have you ever been forced or frightened by a male or a female into doing something sexually that you did not want to do?”), history of STIs, and history of pregnancy termination (women only).

## **Data Analysis**

We calculated the proportion of participants who reported unwanted intoxicated sex, versus those who did not, and compared correlates between these groups – separately for each gender. We tested bivariable associations using Pearson’s chi-squared test for categorical variables (Fisher’s exact test for small cell counts), and included variables having  $p < .05$  in logistic



regression analyses (Rentsch et al., 2014). The final multivariable model was selected using a backward stepwise elimination technique, with the least significant variable dropped until the final model had the optimum (minimum) AIC while maintaining covariates with Type III P-values  $< .2$  (Bozdogan, 1987). Both unadjusted and adjusted odds ratios (ORs and AORs) and 95% confidence intervals (CIs) were reported. Finally, we compared unwanted intoxicated sex by age and gender in ASHR1 and ASHR2 to identify possible changes over time, showing prevalence and unadjusted ORs and 95% CIs, using ASHR1 as the reference. All analyses were stratified by gender and had probability survey sampling weights applied.

## **Results**

### **Participants**

Table 1 presents the social, behavioural, and health characteristics of women and men interviewed in ASHR2, both overall and stratified by unwanted sex due to intoxication. The median age of participants was 48.0 years (IQR 34.0-59.0 for women and IQR 33.0-59.0 for men). A significantly higher proportion of women had tertiary education than did men (58.4% vs 46.5%,  $p < .001$ ), whereas a lower proportion reported annual household incomes of  $\geq$ A\$83,000 (42.1% vs 50.6%,  $p < .001$ ). Women also reported a higher prevalence of bisexual experiences (13.7% vs 5.8%,  $p < .001$ ), having had an STI (21.1% vs 16.0%,  $p < .001$ ), having experienced sex that was forced or frightened (22.7% vs 4.2%,  $p < .001$ ), and psychological distress in the past four weeks (13.5% vs 11.2%,  $p = .021$ ). Gender differences were additionally observed for socio-behavioural variables, with men more likely than women to report using the internet/apps to look for partners in the past year (7.0% vs 3.8%,  $p < .001$ ) and substance use, including ever injecting drugs (3.5% vs 2.1%,  $p = .002$ ), current tobacco smoking (19.7% vs 16.3%,  $p = .003$ ), and drinking alcohol above NMHRC guideline levels (13.5% vs 5.9%,  $p < .001$ ).

### **Prevalence of Unwanted Intoxicated Sex by Social and Health Factors**

Unwanted sex due to intoxication was reported by 801 (16.2%) women and 460 (10.4%) men ( $p < .001$ ). The prevalence was highest among younger participants (Table 1), peaking in women aged 20–29 years (18.8% vs women aged 60–69 years: 8.8%;  $p = .004$ ) and men aged 20–29 years (13.7% vs men aged 60–69 years: 7.1%;  $p = .023$ ), and participants with bisexual experiences (34.6% women and 21.2% men;  $p < .001$  for both genders). Women who reported only having sex with women were least likely to report unwanted intoxicated sex (9.7%) as well

as men with heterosexual experiences only (9.7%), whereas higher rates were seen in women with heterosexual experiences (13.3%) and men with same-sex experiences only (15.7%). Of note, sexual behavior intersected with age and gender to heighten the prevalence in certain groups; e.g., younger women with bisexual experiences aged 30–39 years were significantly more likely than their heterosexual counterparts to report unwanted sex due to intoxication (41.1% vs 13.6%;  $p < .001$  data not shown). A similar disparity was seen for men aged 20–29 years (25.1% vs 12.8%;  $p < .001$  data not shown).

For both men and women, bivariable associations were found between unwanted intoxicated sex and several social and behavioral variables ( $p < .001$ ), many of which were stronger for women than for men, including lifetime injection drug use vs non-use (women: 49.8% vs 15.5%; men: 28.6% vs 9.8%), current tobacco smoking vs non-smoking (women: 27.5% vs 14.0%; men: 17.9% vs 8.6%), and use of the internet/apps to look for partners in the past year vs never (women: 31.5% vs 15.2%; men: 14.7% vs 9.6%). There were also associations between unwanted intoxicated sex and all physical, mental, and sexual and reproductive health variables assessed ( $p < .001$ ), including poor vs excellent general health (women: 19.2% vs 15.0%; men: 26.0% vs 7.8%) and dichotomous (“yes–no”) reports of the following variables: current psychosocial distress (women: 23.5% vs 15%; men: 22.1% vs 9.0%), ever having been forced or frightened into having sex (women: 40.6% vs 9.0%; men: 37.2% vs 9.2%), ever having had an STI (women: 27.5% vs 13.3%; men: 17.6% vs 9.1%), and pregnancy termination (women: 29.4% vs 12.8%).

Among women only, reports of unwanted sex due to intoxication were also more common among those who reported low income, secondary education, Australia as their country of birth, non-religious beliefs, receipt of sex education at school, and drinking alcohol above guideline levels (see Table 1 for all prevalence estimates compared to reference levels).

### **Multivariable Regression: Independent Factors Associated with Unwanted Intoxicated Sex**

Table 2 presents the unadjusted ORs and AORs with 95% CIs of reporting unwanted sex due to intoxication by the various correlates. For both men and women, this experience was independently associated with younger age (e.g., 20–29 years: women: AOR = 2.58, 95% CI = 1.49, 4.47; men: AOR = 2.18, 95% CI = 1.33, 3.57), bisexual activity (women: AOR = 1.77, 95% CI = 1.36, 2.29; men: AOR = 1.51, 95% CI = 1.07, 2.12), lifetime injection drug use

(women: AOR = 2.03, 95% CI = 1.08, 3.83; men: AOR = 2.38, 95% CI = 1.49, 3.79), ever having had an STI (women: AOR = 1.47, 95% CI = 1.10, 1.95; men: AOR = 2.02, 95% CI = 1.45, 2.82), and forced sex (women: AOR = 5.75, 95% CI = 4.36, 7.57; men: AOR = 4.47, 95% CI = 2.91, 6.84). Among women only, unwanted intoxicated sex was associated with drinking alcohol above guideline levels (i.e.  $\geq 14$  drinks/week) (AOR = 1.78, 95% CI = 1.18, 2.68) and ever having terminated a pregnancy (AOR = 1.68, 95% CI = 1.18, 2.20). Among men only, it was associated with current tobacco smoking (AOR = 1.58, 95% CI = 1.16, 2.14), elevated psychosocial distress (AOR = 2.19, 95% CI = 1.52, 3.15), and poor general health (AOR = 2.69, 95% CI = 1.27, 5.69).

### **Trends in Unwanted Intoxicated Sex**

Table 3 shows 10-year time-trends of unwanted sex due to intoxication among men and women, overall and by 10-year age groupings. For comparison to ASHR1 (2001–02), in which persons eligible to take part in the study were aged 16–59 years, we removed participants aged 60–69 years from ASHR2 (2012–13). Between 2001–02 and 2012–13, reports of unwanted intoxicated sex became less common among men (14.1% vs 11.1%; OR = 0.76, 95% CI = 0.62, 0.93), chiefly among 30–39 year olds (18.6% vs. 12.3%; OR = 0.62, 95% CI = 0.42, 0.91). However, it did not change significantly among women as a whole (17.3% vs 17.3%; OR = 1.00, 95% CI = 0.83, 1.19), except among 50–59 year olds, for whom the prevalence increased (8.9% vs 14.8%; OR = 1.79, 95% CI = 1.08, 2.95).

### **Discussion**

In this national sample of Australians aged 16 to 69 years, 1 in 6 women and 1 in 10 men reported unwanted sex due to alcohol or drug intoxication. This was associated with several social and behavioral factors, such as age, sexual behavior, injection drug use, tobacco smoking, and heavy drinking, as well as a broad range of physical, mental, and sexual and reproductive health indicators, including pregnancy termination in women, psychosocial distress and poor general health in men, and lifetime history of STIs and forced sex in both groups. Although we observed a downtrend in the prevalence of unwanted sex due to intoxication for men between in 2001–02 and in 2012–13, reports remained steady in women. This is the first population-representative study to document these associations and time trends in both men and women across a wide age range. We draw on intersectionality and assemblage theory to interpret our

findings and understand in more depth how bodies, affective states, and sociocultural relations interact to influence drug and alcohol use, sexual behavior, and ultimately, health.

In contextualizing our findings, it is important to first acknowledge the complexities of wanting and consent in the context of alcohol and drug use. For instance, previous research has found that some people may consent to sex (including unwanted sex) when intoxicated (Herbenick et al., 2018), while other people may subsequently regret decisions made when drunk or high (Jensen & Hunt, 2019). For others, significant intoxication and, of course, incapacitation, makes the act non-consensual (Abbey, 2002) and still others may find themselves in social and sexual situations in which the act is non-consensual due to duress despite verbal agreement (Cole, 2017; Muehlenhard et al., 2016). Whether people's experiences are problematic and abusive or regretted and possibly relatively harmless, the central issue is that sex – across this broad spectrum – is not deliberately chosen, nor is it negotiated as a mutual, wanted encounter. Findings from the present study provide insights into how combining sex and drugs impacts more significantly on women, consistent with past research (Farrugia, 2017; Peralta, 2008; Ven & Beck, 2009), with both individual and contextual factors likely having a bearing on experiences through mutually constitutive relationships.

The disparate rates of unwanted intoxicated sex in women, particularly young women and bisexually active women, is consistent with previous research (Herbenick et al., 2018). It is important to acknowledge that these are not discrete identities. In fact, in cross-tabulating age and sexual behavior within gender subgroups, we found that 41.1% of bisexually active women aged 30–39 years reported this experience. This highlights the compounding effects of social categories at the individual level, but also the likely influence of related social forces at the structural level, in line with intersectionality theory (Collins, 1998; Crenshaw, 1989; hooks, 1984). Several studies in young heterosexual women (Muehlenhard et al., 2016), and, to a lesser extent, young bisexual women (Murchison et al., 2017; Peralta, 2008), have identified numerous cultural norms that can shape their sexual relations with others in alcohol and drug using contexts.

For example, in a society where women are shamed for their sexuality, past research indicates that some women may use alcohol to feel empowered to have sex, but not necessarily deliberately chosen, wanted, and pleasurable sex (Farris et al., 2010; Farris et al., 2008; Lindgren et al., 2008). Other factors that have been theorized to be important include a lack of

comprehensive sexuality education and the impact of affective assemblages of drugs and drug atmospheres (e.g., music, heat, naked bodies) on young people's capacity to "do, desire, and feel" (Fox & Alldred, 2013, p. 773) as well as their diminished capacity to consent (Dumbili, 2016; Lefkowitz et al., 2015; Lindgren et al., 2009; Livingston et al., 2013; Palamar et al., 2018; Ven & Beck, 2009). While previous studies have also shown links to women's socio-economic status (e.g., income, education) and negotiation power in a given situation or relationship (Bay-Cheng & Bruns, 2016; Livingston et al., 2013), the significant bivariable effects of these factors (which we observed for women only) reduced upon adjusting for other correlates.

For bisexually active women, given that our analyses adjusted for age, their increased risk of unwanted intoxicated sex may have more to do sexual adventurism and queer cultural events, in which alcohol and other drugs may be part of intimate arrangements, than sexual inexperience in young adulthood per se. Discrimination and marginalisation may also play a role. Although it is important to recognize the pleasures that alcohol and other drugs may allow among bisexually active women, in terms of exploring diverse sexualities and creating social connections and community (Peralta, 2008), minority stress theorists have posited that societal stigma from both straight and gay communities can increase bisexually active individuals' use of substances and risk of sexual victimization (Murchison et al., 2017).

While much research has examined unwanted intoxicated sex in women, we observed a high prevalence in men also, particularly bisexually active men in their 20s (i.e., 25.1%). As outlined by Ford (2018), unwanted sexual experiences in men can result from binge drinking and regret but more often, they are constituted through gendered expectations for men to always have sex and interactional pressures to "continue a line of action" and "save face," even in encounters that feel awkward or uncomfortable (p. 1306). In Ford's study, most men reported such incidents with casual acquaintances. This is consistent with other research that has found that alcohol may be used by some men to facilitate casual sex experiences, whilst avoiding responsibility for unintended outcomes (Ven & Beck, 2009).

Interestingly though, heavy drinking was independently associated with unwanted intoxicated sex in women only in our study. Past research has found that women who are heavy drinkers are more likely to report that sex feels easier with alcohol, and to regret sex and partner choice after drinking (Connor et al., 2015; Mallett et al., 2006). An advantage of drawing on assemblage theory to interpret these results is that it provides a framework for thinking about

how biological, psychological, and social-relational forces may work together to increase this likelihood for women but not men, such as lower alcohol intolerance (Moinuddin et al., 2016), sexual scripts (Farris et al., 2010; Farris et al., 2008; Lindgren et al., 2008), and rape myths (Webster et al., 2018). Conversely, the associations seen with injection drug use and smoking behavior in men, which is inversely related to socio-economic status in Australia (Siahpush, 2004; White et al., 2003), have not been previously documented.

Our findings relating to sexual and reproductive health – including pregnancy termination for women and STI history for both genders – are consistent with results from past research that have linked both consensual and assault experiences involving alcohol and other drugs with lower odds of condom use and, thus, risk for a range of negative health outcomes (Connor et al., 2015; Cooper, 2002). We extended investigations to consider the association of physical and emotional wellbeing and found a strong relationship with elevated psychosocial distress and poorer general health in men only. There is scant recognition that men experience unwanted intoxicated sex and mental ill-health, with existing research and social discourse around the drug contexts of consent, unwanted sex, and sexual assault primarily focused on women. As our data were cross-sectional, these associations may operate bidirectionally and deserve researchers' attention.

The strong association we observed between unwanted sex due to intoxication and sexual assault (i.e., sex that is forced or frightened) is not surprising. Previous research has shown that individuals who experience sexual assault, especially in childhood, are more likely to experience negative sexual outcomes later in life, such as feelings of shame and low self-worth (Lemieux & Byers, 2008), risky sexual behavior (Roemmele & Messman-Moore, 2011), problem substance use (Ullman et al., 2013), and repeat victimization (Classen et al., 2005). The strong effects in this analysis indicate a need for longitudinal research in relation to resilience in sexual health in individuals with trauma histories (Fava et al., 2018).

Finally, the finding that reports of unwanted sex due to intoxication for men declined over ten years yet remained steady in women suggests that the sociocultural forces that produce women's vulnerability have not changed and that there is a need for more dialogue and education to help people think critically about the complicated issues of consent, wanted sex, pleasure, and power while drinking. There are many reasons as to why the prevalence appeared to increase for women in their 50s, but the most plausible is a cohort effect (i.e., the prevalence matches that of

women in their 40s in 2001–02). Whether these population-based prevalence estimates are affected by evolving norms, attitudes, and behaviors toward sex and relationships in recent years because of the #MeToo movement will warrant future investigation.

### **Limitations and Strengths**

A main limitation of our study is the single item assessment of unwanted intoxicated sex and the lack of information regarding the circumstances in which this occurred (e.g., gender of partner, relationship type, socio-spatial settings). We also did not measure whether intoxication was sufficient or insufficient to vitiate consent. That is, this variable may confound consensual but unwanted sex with sexual assault, both of which may occur under conditions in which persons are intoxicated. As the magnitude of some AORs may be stronger in assault circumstances (e.g., psychosocial distress), it is possible that measurement indistinctness impacted on effect estimates for some variables. This highlights the challenge of using population-based survey data to investigate complex assemblages of consent, wanted sex, and alcohol and other drugs. These intricacies should be investigated in future studies.

Other limitations relate to the cross-sectional design of our study, the bias that may arise from social desirability and recall period, gender binarism, and the invisibility of trans and non-binary people in the data. Given the known differences in both unwanted sex and sexual assault as well as drug and alcohol use among sexual and gender diverse populations, a more thoughtful incorporation of measures of biological sex and social gender in population health surveys is needed (Bauer et al., 2017). Metrics of social determinants that extend beyond the individual-level are also warranted (Krieger, 2020).

Notwithstanding these limitations, our study is strengthened by its large sample size and that it is based on a national population representative of 19,369 Australian men and women aged 16–69 years. The time-trend data over 10 years and population-level prevalence estimates and associations in both women and men across a variety of social positions – including age, sexual behavior, and socioeconomic status – offers an important contribution to the field. There is a dearth of knowledge regarding what factors are associated with reporting unwanted sex due to intoxication in the general population, and very limited literature on these issues among men (e.g., Ford, 2018). The high participation rate (66%), interview completion rate (>99%), and item response rate (>90% for 95% of questions) suggest that results are robust and broadly

representative of the Australian population. Additional intersectional and theoretical approaches to this topic are needed in population sexual health research.

## Conclusions

The results described here suggest that the experience of unwanted sex due to intoxication is associated with a multiplicity of factors. In particular, our findings identified young bisexually active women as a group that are at especially high risk of unwanted intoxicated sex, suggesting that an individual's experience of consent, unwanted sex, and intoxication – and its health implications – may differ by age, gender, and sexual behavior among Australians. Our findings also identified a high prevalence in men as well as individuals who report having experienced forced sex in their lifetime. Traditionally, sexuality education has targeted change at the individual level (Bay-Cheng, 2017). Assemblage thinking provides insight into how the assemblage of intersecting factors in individuals' physical and social environments could be changed to reduce the risks associated with combining alcohol and other substances with sex. With the #MeToo movement focusing attention on sexual violence against women, it is critically important that studies and interventions target men also. There is furthermore a need to make space for a view of sexuality that is not exclusively focused on risk, but instead investigates the conditions of possibility for safe and pleasurable sexual experiences, and drinking and drug use also.

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Running head: UNWANTED SEX DUE TO INTOXICATION

**Table 1.** Baseline characteristics and bivariable associations with ever having had unwanted sex due to intoxication among women and men aged 16-69 years

Variables	Men (N=3,875)				Women (N=4,279)			
	TOTAL n (%) <sup>a</sup>	Unwanted sex		p-value	TOTAL n (%) <sup>a</sup>	Unwanted sex		p-value
		No (n=3415, 89.6%) n (%) <sup>a</sup>	Yes (n=460, 10.4%) n (%) <sup>a</sup>			No (n=3478, 83.8%) n (%) <sup>a</sup>	Yes (n=801, 16.2%) n (%) <sup>a</sup>	
<b>Socio-demographics</b>								
<b>Age (years)</b>				.023				.004
16-19	236 (6.5)	208 (88.9)	28 (11.1)		231 (6.3)	190 (82.8)	41 (17.2)	
20-29	545 (19.1)	464 (86.3)	81 (13.7)		546 (21.6)	417 (81.2)	129 (18.8)	
30-39	549 (19.5)	474 (87.7)	75 (12.3)		675 (20.9)	502 (81.9)	173 (18.1)	
40-49	709 (20.8)	617 (89.9)	92 (10.1)		832 (19.7)	644 (82.9)	188 (17.1)	
50-59	927 (18.8)	824 (91.8)	103 (8.2)		1036 (18.4)	855 (85.2)	181 (14.8)	
60-69	909 (15.5)	828 (92.9)	81 (7.1)		959 (13.1)	870 (91.2)	89 (8.8)	
<b>Marital status</b>				.004				< .001
Married	1696 (53.4)	1545 (91.9)	151 (8.1)		1716 (52.1)	1457 (87.5)	259 (12.5)	
Divorced	481 (7.2)	410 (86.8)	71 (13.2)		735 (8.8)	590 (79.1)	145 (20.9)	
Separated	211 (3.3)	178 (85.0)	33 (15.0)		231 (2.7)	184 (79.7)	47 (20.3)	
Widowed	49 (0.5)	45 (94.0)	< 5 (6.0)		257 (2.3)	240 (91.7)	17 (8.3)	
Never married	1437 (36.7)	1237 (87.1)	200 (12.9)		1338 (34.0)	1006 (79.2)	332 (20.8)	
<b>Religious</b>				.758				< .001
Yes	1782 (46.5)	1569 (89.3)	213 (10.7)		2325 (52.7)	1667 (87.2)	285 (12.8)	
No	2083 (53.5)	1837 (89.8)	246 (10.2)		1952 (47.3)	1810 (80.7)	515 (19.3)	
<b>Education</b>				.788				.044
Post-secondary	1804 (48.4)	1596 (90.0)	208 (10.0)		2438 (58.4)	1972 (84.9)	466 (15.1)	
Finished secondary	1385 (36.5)	1215 (89.0)	170 (11.0)		964 (24.4)	759 (80.3)	205 (19.7)	
Did not finish secondary	680 (15.0)	599 (89.6)	81 (10.4)		876 (17.2)	746 (85.1)	130 (14.8)	
<b>Income (annual household, AUD)</b>				.101				.021
High (\$83,000 or more)	1667 (50.6)	1487 (90.0)	180 (10.0)		1434 (42.1)	1163 (84.6)	271 (15.4)	
Middle (\$52,000 to less than \$83,000)	762 (19.1)	674 (90.7)	88 (9.3)		838 (19.4)	680 (84.0)	158 (16.0)	
Low (Less than \$52,000)	1219 (24.6)	1050 (87.1)	169 (12.9)		1711 (31.1)	1374 (81.1)	337 (18.9)	
Do not know/prefer not to answer	227 (5.7)	204 (92.5)	23 (7.5)		296 (7.4)	261 (90.4)	35 (9.6)	
<b>Country of birth</b>				.480				.024
Australia	2966 (75.3)	2614 (89.1)	352 (10.9)		3415 (78.5)	2748 (82.9)	667 (17.1)	
Outside Australia, mainly English-speaking	461 (11.3)	406 (91.3)	55 (8.7)		487 (10.5)	396 (84.6)	91 (15.4)	
Outside Australia, other	442 (13.4)	391 (90.4)	51 (9.6)		374 (11.0)	331 (89.7)	43 (10.3)	
<b>Aboriginal or Torres Strait Islander</b>				.127				.145

## Running head: UNWANTED SEX DUE TO INTOXICATION

Yes	63 (1.6)	51 (80.7)	11 (19.3)		95 (2.6)	69 (76.3)	26 (23.7)	
No	3812 (98.4)	3363 (89.7)	449 (10.3)		4184 (97.4)	3409 (84.0)	775 (16.0)	
<b>Region of residence</b>				.834				.598
Major city	2426 (68.9)	2132 (89.4)	294 (10.6)		2732 (69.4)	2215 (84.2)	517 (15.8)	
Regional	1282 (28.3)	1139 (89.4)	143 (10.6)		1432 (28.5)	1168 (82.4)	264 (17.6)	
Remote	93 (2.8)	82 (91.7)	11 (8.3)		57 (2.1)	48 (86.1)	9 (13.9)	
<b>Sex-related behaviours</b>								
<b>Sexual experience</b>				< .001				< .001
Heterosexual only	3254 (93.2)	2917 (90.3)	337 (9.7)		3126 (86.0)	2712 (86.7)	414 (13.3)	
Homosexual only	72 (1.0)	60 (84.3)	12 (15.7)		27 (0.3)	24 (90.3)	< 5 (9.7)	
Both	546 (5.8)	435 (78.8)	111 (21.2)		1119 (13.7)	736 (65.4)	383 (34.6)	
<b>Sex education at school</b>				.107				.004
Yes	1707 (52.7)	1495 (88.5)	212 (11.5)		2076 (39.5)	1378 (81.5)	393 (18.5)	
No	1849 (39.6)	1624 (90.2)	225 (9.8)		1771 (51.0)	1742 (86.3)	334 (13.7)	
Do not know/prefer not to answer	318 (7.7)	295 (93.3)	23 (6.7)		431 (9.4)	357 (85.9)	74 (14.1)	
<b>Active sex life is important to wellbeing</b>								
Agree	3274 (87.7)	2880 (89.6)	394 (10.4)	.988	3166 (79.5)	2550 (83.4)	616 (16.6)	.528
Neutral	252 (6.0)	226 (89.5)	26 (10.5)		420 (9.2)	334 (83.6)	86 (16.4)	
Disagree	323 (6.3)	284 (89.2)	39 (10.8)		646 (11.3)	552 (86.0)	94 (14.0)	
<b>Use of internet/apps to look for partners</b>				< .001				< .001
Never	3114 (86.2)	2770 (90.4)	344 (9.6)		3626 (88.8)	3014 (84.8)	612 (15.2)	
Previously, but not in the last year	295 (6.5)	247 (82.6)	48 (17.4)		379 (6.9)	272 (78.7)	107 (21.3)	
Currently, i.e., in the last year	456 (7.0)	388 (85.3)	68 (14.7)		258 (3.8)	179 (68.5)	79 (31.5)	
Do not know/prefer not to answer	10 (0.3)	10 (100.0)	0 (0.0)		16 (0.6)	13 (94.5)	< 5 (5.5)	
<b>Drug-related behaviours</b>								
<b>Injection drug use (ever)</b>				< .001				< .001
No	3685 (96.5)	3283 (90.2)	402 (9.8)		4150 (97.9)	3420 (84.5)	730 (15.5)	
Yes	184 (3.5)	127 (71.4)	57 (28.6)		127 (2.1)	56 (50.3)	71 (49.8)	
<b>Tobacco smoker (current)</b>				< .001				< .001
No	3057 (80.3)	2767 (91.4)	290 (8.6)		3455 (83.7)	2909 (86.0)	546 (14.0)	
Yes	814 (19.7)	644 (82.1)	170 (17.9)		824 (16.3)	569 (72.5)	255 (27.5)	
<b>Drinking alcohol above guidelines (current)</b>				.483				< .001
No	3852 (86.1)	2920 (89.6)	364 (10.4)		3959 (93.7)	3265 (84.6)	694 (15.4)	
Yes	568 (13.4)	473 (88.5)	95 (11.5)		307 (5.9)	203 (70.4)	104 (29.6)	
Do not know/prefer not to answer	21 (0.6)	20 (98.7)	< 5 (1.3)		13 (0.3)	10 (89.7)	< 5 (10.3)	

## Health indicators



Running head: UNWANTED SEX DUE TO INTOXICATION

<b>General health (current)</b>				< .001				.006
Excellent	773 (21.5)	704 (92.2)	69 (7.8)		814 (20.5)	694 (85.0)	120 (15.0)	
Very good	1511 (42.0)	1346 (91.0)	165 (9.0)		1651 (41.9)	1362 (86.2)	289 (13.8)	
Good	1056 (26.2)	915 (86.7)	141 (13.3)		1158 (25.7)	921 (81.5)	237 (18.5)	
Fair	396 (8.0)	335 (88.3)	61 (11.7)		457 (8.5)	350 (77.1)	107 (22.9)	
Poor	134 (2.3)	110 (74.0)	24 (26.0)		196 (3.4)	149 (80.8)	47 (19.2)	
<b>Psychological distress (past 4 weeks)</b>				< .001				< .001
No	3338 (88.8)	2997 (91.0)	341 (9.0)		3606 (86.5)	3000 (85.0)	606 (15.0)	
Yes (1 SD > mean)	537 (11.2)	418 (77.9)	119 (22.1)		673 (13.5)	478 (76.5)	195 (23.5)	
<b>Forced sex (ever)</b>				< .001				< .001
No	3622 (95.6)	3250 (90.8)	372 (9.2)		3065 (77.1)	2758 (91.0)	307 (9.0)	
Yes	245 (4.2)	160 (62.8)	85 (37.2)		1199 (22.7)	707 (59.4)	492 (40.6)	
Do not know/prefer not to answer	8 (0.3)	5 (73.2)	<5 (26.8)		15 (0.2)	13 (79.8)	< 5 (20.2)	
<b>Sexually transmitted infection (ever)</b>				< .001				< .001
No	3011 (83.4)	2704 (90.9)	307 (9.1)		3116 (77.3)	2673 (86.7)	443 (13.3)	
Yes	832 (16.0)	681 (82.4)	151 (17.6)		1097 (21.1)	748 (72.5)	349 (27.5)	
Do not know/prefer not to answer	32 (0.6)	30 (88.9)	< 5 (11.1)		66 (1.6)	57 (94.7)	9 (5.3)	
<b>Pregnancy termination (ever)</b>				n/a				< .001
No					2416 (56.4)	2060 (87.2)	356 (12.8)	
Yes					816 (16.6)	549 (70.6)	267 (29.4)	
Never been pregnant					1007 (27.0)	836 (84.9)	171 (15.1)	

a Row percentages are shown. Percentages have survey weights applied. Do not know/prefer not to answer was not included in analyses unless >5% missing data.

**Table 2.** Multivariable logistic regression results showing factors associated with ever having had unwanted sex due to intoxication among women and men aged 16-69 years

	Men (N=3,858)		Women (N=4,221)	
	Unadjusted ORa (95% CI)	Adjusted ORa (95% CI)	Unadjusted ORa (95% CI)	Adjusted ORa (95% CI)
<b>Socio-demographics</b>				
<b>Age (years)</b>				
16-19	1.63 (0.84, 3.17)	1.88 (0.90, 3.92)	<b>2.15 (1.25, 3.71)</b>	<b>2.74 (1.39, 5.42)</b>
20-29	<b>2.06 (1.32, 3.21)</b>	<b>2.18 (1.33, 3.57)</b>	<b>2.45 (1.61, 3.74)</b>	<b>2.58 (1.49, 4.47)</b>
30-39	<b>1.75 (1.12, 2.73)</b>	<b>1.82 (1.12, 2.98)</b>	<b>2.29 (1.55, 3.37)</b>	<b>2.11 (1.32, 3.38)</b>
40-49	1.47 (0.96, 2.23)	1.39 (0.88, 2.20)	<b>2.13 (1.46, 3.11)</b>	<b>1.77 (1.14, 2.74)</b>
50-59	1.15 (0.77, 1.75)	0.94 (0.60, 1.46)	<b>1.76 (1.21, 2.56)</b>	<b>1.54 (1.00, 2.37)</b>
60-69	Reference	Reference	Reference	Reference
<b>Marital status</b>				
Married	Reference	Not selected	Reference	Not selected
Divorced	<b>1.78 (1.16, 2.72)</b>		<b>1.83 (1.33, 2.51)</b>	
Separated	<b>2.06 (1.08, 3.95)</b>		<b>1.78 (1.10, 2.88)</b>	
Widowed	0.73 (0.23, 2.27)		0.64 (0.30, 1.35)	
Never married	<b>1.71 (1.25, 2.33)</b>		<b>1.86 (1.43, 2.42)</b>	
<b>Religious</b>				
Yes			Reference	Reference
No			<b>1.63 (1.28, 2.07)</b>	1.17 (0.90, 1.53)
<b>Education</b>				
Post-secondary			Reference	Reference
Finished secondary			<b>1.38 (1.05, 1.83)</b>	<b>1.37 (1.00, 1.87)</b>
Did not finish secondary			0.97 (0.71, 1.34)	0.93 (0.62, 1.39)
<b>Annual income</b>				
High (\$83,000 or more)			Reference	Reference
Middle (\$52,000 to less than \$83,000)			1.05 (0.75, 1.48)	0.89 (0.62, 1.27)
Low (Less than \$52,000)			<b>1.28 (0.99, 1.66)</b>	0.98 (0.71, 1.35)
Do not know/prefer not to answer			<b>0.54 (0.32, 0.90)</b>	<b>0.49 (0.27, 0.89)</b>
<b>Country of birth</b>				
Australia			Reference	
Outside Australia, mainly English-speaking			0.87 (0.62, 1.23)	0.86 (0.59, 1.24)
Outside Australia, other			<b>0.56 (0.35, 0.90)</b>	0.67 (0.40, 1.14)

## Running head: UNWANTED SEX DUE TO INTOXICATION

### Sex-related behaviours

#### Sexual experience

Heterosexual only	Reference	Reference	Reference	Reference
Homosexual only	1.74 (0.87, 3.50)	0.78 (0.38, 1.61)	Small cell count	Small cell count
Both	<b>2.52 (1.91, 3.33)</b>	<b>1.51 (1.07, 2.12)</b>	<b>3.45 (2.81, 4.23)</b>	<b>1.77 (1.36, 2.29)</b>

#### Sex education at school

Yes			Reference	Not selected
No			<b>0.70 (0.55, 0.88)</b>	
Do not know/prefer not to answer			0.72 (0.49, 1.06)	

#### Use of internet/apps to look for partners

Never	Reference	Reference	Reference	Reference
Previously, but not in the past year	<b>1.99 (1.24, 3.22)</b>	1.39 (0.77, 2.53)	<b>1.49 (1.07, 2.08)</b>	0.96 (0.67, 1.37)
Currently, i.e. in the past year	<b>1.64 (1.14, 2.34)</b>	0.86 (0.57, 1.30)	<b>2.55 (1.69, 3.84)</b>	1.64 (0.95, 2.84)
Do not know/prefer not to answer	Small cell count	Small cell count	0.50 (0.11, 2.40)	0.82 (0.22, 3.07)

### Drug-related behaviours

#### Injection drug use (ever)

No	Reference	Reference	Reference	Reference
Yes	<b>3.73 (2.41, 5.79)</b>	<b>2.38 (1.49, 3.79)</b>	<b>5.56 (3.24, 9.54)</b>	<b>2.03 (1.08, 3.83)</b>

#### Tobacco smoker (current)

No	Reference	Reference	Reference	Reference
Yes	<b>2.31 (1.72, 3.10)</b>	<b>1.58 (1.16, 2.14)</b>	<b>2.34 (1.82, 3.01)</b>	1.23 (0.91, 1.66)

#### Drinking alcohol above guidelines (current)

No			Reference	Reference
Yes			<b>2.25 (1.57, 3.22)</b>	<b>1.78 (1.18, 2.68)</b>
Do not know/prefer not to answer			0.63 (0.15, 2.71)	0.49 (0.15, 1.61)

### Health indicators

#### General health (current)

Excellent	Reference	Reference	Reference	Reference
Very good	1.14 (0.76, 1.72)	1.06 (0.69, 1.61)	0.92 (0.65, 1.30)	0.75 (0.52, 1.09)
Good	<b>1.80 (1.18, 2.76)</b>	1.51 (0.95, 2.38)	1.28 (0.90, 1.82)	0.94 (0.64, 1.38)
Fair	1.47 (0.90, 2.43)	1.19 (0.69, 2.06)	<b>1.69 (1.10, 2.59)</b>	1.05 (0.63, 1.74)
Poor	<b>4.16 (2.08, 8.35)</b>	<b>2.69 (1.27, 5.69)</b>	1.37 (0.78, 2.38)	0.77 (0.40, 1.46)

#### Psychological distress (past 4 weeks)

No	Reference	Reference	Reference	Not selected
Yes (1 SD > mean)	<b>2.91 (2.08, 4.07)</b>	<b>2.19 (1.52, 3.15)</b>	<b>1.71 (1.30, 2.26)</b>	

#### Forced sex (ever)

No	Reference	Reference	Reference	Reference
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Running head: UNWANTED SEX DUE TO INTOXICATION

Yes	<b>5.62 (3.73, 8.47)</b>	<b>4.47 (2.91, 6.84)</b>	<b>6.80 (5.34, 8.66)</b>	<b>5.75 (4.36, 7.57)</b>
Do not know/prefer not to answer	3.60 (0.62, 20.93)	4.92 (0.67, 36.34)	3.17 (0.65, 15.35)	2.59 (0.60, 11.14)
<b>Sexually transmitted infection (ever)</b>				
No	Reference	Reference	Reference	Reference
Yes	<b>2.18 (1.62, 2.93)</b>	<b>2.02 (1.45, 2.82)</b>	<b>2.46 (1.94, 3.11)</b>	<b>1.47 (1.10, 1.95)</b>
Do not know/prefer not to answer	0.41 (0.05, 3.14)	0.19 (0.03, 1.41)	<b>0.42 (0.19, 0.94)</b>	<b>0.29 (0.15, 0.77)</b>
<b>Pregnancy termination (ever)</b>				
No			Reference	Reference
Yes			<b>2.83 (2.16, 3.72)</b>	<b>1.68 (1.18, 2.20)</b>
Never been pregnant			1.21 (0.90, 1.61)	0.86 (0.58, 1.27)

Notes: For unadjusted estimates, empty cells indicate variable was not a candidate for model inclusion (i.e.,  $p > .05$  in bivariable). For adjusted estimates, empty cells indicate variable was entered into model, but not selected for. ORs excluding the null value of '1' are in bold.

**Table 3.** Ten-year time-trends of unwanted sex due to intoxication among women and men aged 16-59 years in the First (ASHR1, 2001-2) and Second Australian Study of Health and Relationships (ASHR2, 2012-13)

	Unwanted sex due to intoxication			
	n(%) for ASHR1	n(%) for ASHR2	OR (95% CI) for ASHR2 vs. ASHR1	p-value
<b>All</b>	1465 (15.7)	1091 (14.2)	0.89 (0.78, 1.02)	0.08
<b>Women</b>				
All	743 (17.3)	712 (17.3)	1.00 (0.83, 1.19)	0.97
16-19	61 (23.9)	41 (17.2)	0.66 (0.36, 1.23)	0.19
20-29	204 (23.5)	129 (18.8)	0.76 (0.51, 1.13)	0.17
30-39	226 (19.0)	173 (18.1)	0.94 (0.67, 1.31)	0.72
40-49	173 (15.0)	188 (17.1)	1.17 (0.83, 1.65)	0.38
50-59	79 (8.9)	181 (14.8)	<b>1.79 (1.08, 2.95)</b>	<b>0.02</b>
<b>Men</b>				
All	722 (14.1)	379 (11.1)	<b>0.76 (0.62, 0.93)</b>	<b>0.007</b>
16-19	63 (17.5)	28 (11.1)	0.59 (0.29, 1.21)	0.15
20-29	192 (16.1)	81 (13.7)	0.83 (0.55, 1.25)	0.37
30-39	230 (18.6)	75 (12.3)	<b>0.62 (0.42, 0.91)</b>	<b>0.02</b>
40-49	153 (12.5)	92 (10.1)	0.79 (0.53, 1.18)	0.25
50-59	84 (6.9)	103 (8.1)	1.21 (0.75, 1.94)	0.44

a Percentages have survey weights applied. People aged 60-69 years have been removed from the ASHR2 sample for comparison.